CAUSES AND EFFECTS OF ABUSES IN A FEASIBILITY STUDY: A STUDY IN MALAYSIAN CONSTRUCTION INDUSTRY

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ABSTRACT

Feasibility study is essential to be carried out at the early stage of project life cycle before entering into actual construction works. However, there are abuses of feasibility study occurred in construction industry in which this issue is seldom being given attention by the developers. Hence, there are four objectives in this research that aims to be achieved, which include to identify the causes of abuses of feasibility study in construction industry, to determine the effects of abuses of feasibility study in construction industry, to highlight the types of abuses occurred in feasibility study in construction industry, and to examine the relationship between the causes and effects of abuses of feasibility study in construction industry. The respondents of this research are developers who are the REHDA (Real Estate and Housing Developers' Association) members in Johor, Malaysia. The research data are collected by using postal questionnaires to 109 developers in Johor, Malaysia. Statistical analysis is used for data analysis in this research. For achieving first three research objectives, mean frequencies are used, whereas for achieving the fourth research objective, Pearson correlation is used. The results of data analysis showed that there are occurrences of abuses of feasibility study where types of abuses occurred in feasibility study, causes and effects of abuses of feasibility study in construction industry are determined and ranked according to their mean frequencies. In addition, the findings of this research also showed that there are positive and significant relationships between the causes and effects of abuses of feasibility study. As conclusion, the developers and project team should aware of the issue of abuses of feasibility study in construction industry. Besides that, the developers and project team should also alert to the causes of abuses of feasibility study in order to avoid from suffering of bearing the effects of abuses of feasibility study in construction industry.

ABSTRAK

Kajian kemungkinan adalah wajib untuk dilakukan sebelum satu pembinaan projek dimulakan. Walau bagaimanapun, terdapat kes penyalahgunaan kajian kemungkinan dalam industri pembinaan di mana isu ini kurang diberi perhatian dan dibincangkan oleh pemaju pembinaan. Oleh itu, terdapat empat tujuan dalam penjalanan kajian penyelidikan ini di mana ia merangkumi untuk mengetahui sebab-sebab berlakunya penyalahgunaan kajian kemungkinan dalam industri pembinaan, mengenal pasti kesan-kesan berlakunya penyalahgunaan kajian kemungkinan dalam industri pembinaan, menentukan jenis-jenis penyalahgunaan kajian kemungkinan berlaku dalam industri pembinaan, dan menganalisis hubungan antara sebab-sebab dan kesan-kesan berlakunya penyalahgunaan kajian kemungkinan dalam industri pembinaan. Responden-responden dalam kajian penyelidikan ini adalah pemaju pembinaan yang merupakan ahli-ahli institusi REHDA (Real Estate and Housing Developers' Association) di Johor, Malaysia. Data-data dikumpulkan melalui pengiriman kertas soal selidik kepada 109 pemaju pembinaan di Johor, Malaysia. Untuk menganalisis data, analisis statistik telah digunakan. Purata telah digunakan untuk mencapai tujuan pertama, tujuan kedua dan tujuan ketiga kajian penyelidikan ini. Selain itu, 'Pearson correlation' digunakan untuk mencapai tujuan keempat kajian penyelidikan, iaitu untuk menganalisis hubungan antara sebab-sebab dan kesan-kesan berlakunya penyalahgunaan kajian kemungkinan dalam industri pembinaan. Mengikut keputusan hasilnya proses analisis, isu penyalahgunaan kajian kemungkinan dalam industri pembinaan memang ada berlaku, hal ini disebabkan oleh pelbagai sebab dan kesan berlakunya penyalahgunaan kajian kemungkinan dalam industri pembinaan dikenal pasti dan disusun berdasarkan purata masing-masing. Selain itu, kajian penyelidikan ini juga mendapati sebab-sebab dan kesan-kesan berlakunya penyalahgunaan kajian kemungkinan dalam industri pembinaan adalah saling berkaitan di mana hubungan ini adalah positif dan ketara antara satu sama lain. Secara keseluruhannya, pemaju pembinaan seharusnya memberi perhatian yang secukupnya terhadap isu ini di mana isu ini akan mendatangkan kesan-kesan negatif sekiranya sebab-sebab berlakunya penyalahgunaan kajian kemungkinan dalam industri pembinaan tidak diketahui.

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LIST OF ABBREVIATIONS

BCR	Benefit-Cost Ratio
EOT	Extension of Time
IRR	Internal Rate of Return
NGOs	Non-Government Groups
NPV	Net Present Value
PP	Payback Period
REHDA	Real Estate and Housing Developers' Association
SPSS	Statistical Product and Service Solutions

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

This chapter is mainly to intro and describes the overall research. Firstly, problem background typically draws a brief picture of feasibility studies for the construction projects. On the other hands, the problem statement is mainly to detail out the reason of carrying out this research. Next, research objectives and research questions are also included in this chapter. These two elements are purposely to list out the objective of this research, and both of these two elements are closely related to each other. The next component that makes up this chapter is scope of the study, which is to determine the respondent involved and location of the research being carried out. Besides that, it also needs to describe why this research is important, which is written in the part of significance of the study. Last but not least, the operational definition and expected results are also included in this chapter.

1.2 BACKGROUND OF STUDY

In the construction industry, feasibility study becomes an essential element in which it needs to be conducted before each project to be carried out (Huh et al., 2012). Feasibility studies involve identifying and analyzing the strength and the weaknesses of the project, and at the same time, also determining the opportunity and threats outside the company within the construction industry. According to Hyari, K. and Kandil, A. (2009), feasibility studies are conducted mainly to determine and decide whether a project is profitable and realistically be achieved. Feasibility studies are normally evaluating the mutual benefits that can be earned and gained from the project (Abou-Zeid et al., 2007).

Before starting to work on a project, project manager needs to consider many things in order to achieve higher chances of success. Managers often face difficulties in making decision among various construction projects (Abou-Zeid et al., 2007). Thus, feasibility study is essential to ensure project to be delivered in the right time and correct condition.

Feasibility studies play important roles in conducting construction projects. The main reasons of carrying out feasibility study are to satisfy the customers' requirements and to ensure project success. This in turn will increase the productivity and profitability of the organization. Feasibility studies provide a detailed report on the every aspect of the project. Therefore, project management team can manage and handle the project in a more systematic way. Furthermore, feasibility studies also supply some possible solutions or suggestions in which the organization can provide for the customers.

1.3 PROBLEM STATEMENT

In general, feasibility study can be categorized as economical and accounting science in which it is a procedure which includes computing the profit and costs for every project, so that, with the calculations made, managers can make wise investment decisions (Abou-Zeid et al., 2007). With the presence of feasibility studies, the company will not spend any unnecessary money on the unprofitable projects. Good feasibility studies are one of the key elements towards project success (Mackenzie, W. and Cusworth, N., 2007).

Firstly, the topic of abuses of feasibility studies is less discussed before. However, in reality, there are abuses of feasibility studies occurred in some companies. According to Mackenzie, W. and Cusworth, N. (2007), the issues of abuses of feasibility studies are usually resulted from the misunderstanding of study phases and also having wrong concept of the objective of the feasibility studies. Abuses of feasibility studies contribute to some effects and negative results of project outcome.

Therefore, there is a need to carry out this research to investigate causes and effects of abuses of feasibility study in construction industry. There are many researchers had found out there are some problems occurring in conducting feasibility study (Mackenzie, W. and Cusworth, N., 2007; Hendrickson and Au, 1998; Thuy, L. M., 2011; Cushman et al., 2001), in which these problems will contribute to abuses of feasibility study. However, there is less research which particularly aims to identify the causes and effects of abuses of feasibility study in construction industry. Hence, there is a strong desire to carry out a research on causes and effects of abuses of feasibility study as well as the types of abuses occurred in feasibility study in Malaysian construction industry. In addition, this research also purposely to investigate the relationship between the causes and effects of abuses of feasibility study in construction industry. With the findings of this research, the developers

and project team will be more aware of the issues of abuses of feasibility study, in which will reduce the probability of project success (Otim et al., 2011).

1.4 RESEARCH OBJECTIVES

1. To identify the causes of abuses of feasibility study in construction industry.
2. To determine the effects of abuses of feasibility study in construction industry.
3. To highlight the types of abuses occurred in feasibility study in construction industry.
4. To examine the relationship between the causes and effects of abuses of feasibility study in construction industry.

1.5 RESEARCH QUESTIONS

1. What are the causes of abuses of feasibility study in construction industry?
2. What are the effects of abuses of feasibility study in construction industry?
3. What are the types of abuses occurred in feasibility study in construction industry?
4. What type of relationship between the causes and effects of abuses of feasibility study in construction industry?

1.6 SCOPE OF STUDY

This study focuses on the real estate and housing developers who have conducted feasibility studies in all kinds of construction project. The following are some details about the scope of the study.

1.6.1 Respondents of the Research

The chosen respondents are the developers who are the REHDA (Real Estate and Housing Developers' Association) members in Johor, Malaysia. This study involves the participation of 109 developers of all kinds of construction projects in Johor, Malaysia.

1.6.2 Location of the Research

This research will particularly focusing on Johor, Malaysia is mainly due to it is one of the more developed states in Malaysia. There is wide variety of construction projects carried out in Johor. In addition, there are high level of customers demand and needs in the construction industry. Moreover, Johor has high potential of development in the construction industry with the support from government.

1.6.3 Instrument Used in the Research

The instrument used to collect the data is questionnaire, which will be distributed by posting to each company. The questionnaire will be demonstrated in the form of closed-ended questions and likert-scale questions.

1.7 SIGNIFICANCE OF STUDY

While at present there is no solid evidence which shows that there are abuses of feasibility study in construction industry. Furthermore, the findings of this study are

important to help to determine the causes and effects of abuses of feasibility study, as well as the types of abuses occurred in feasibility study. Other than that, this study is also important to investigate whether there is positive correlation between the causes and effects of abuses of feasibility study. With the findings of this study, the developers will more aware of the issues of abuses of feasibility study. Moreover, this study can also be a reference for people in the future.

1.8 OPERATIONAL DEFINITION

1. $NPV = C_0 + \frac{C_t}{(1+r)^t}$

Where

C_0 = Initial investment/cash outflow of today

C = Cash inflows in the period of *t*

t = time period of the investment

r = "opportunity cost of capital"/ required rate of return

2. $Payback\ Period = \frac{Project\ \ costs}{Annual\ \ cash\ flows}$

3. $IRR = \sum_{t=0}^{T} \frac{CF\ (t)}{(1+d)^t} = 0$

   Where d = IRR is the internal rate of return corresponding to cash flow *CF (t)*.

4. $Benefit - cost\ ratio = \frac{Cash\ flow}{Project\ \ investment}$

5. $Construction\ time =$
   $Practical\ Completion\ Date - Project\ Commencement\ Date$

6. $Speed\ of\ Construction\ = \frac{Gross\ Floor\ Area\ (m^2)}{Construction\ \ Time\ \left(^{days}/_{weeks}\right)}$

7. $Time\ Variation = \frac{Construction\ \ Time - Revised\ \ Contract\ \ Period}{Revised\ \ Contract\ \ Period} \times 100\%$
   Where Revised Contract Period = Original Contract Period + EOT

8. $s = X^2NP\ (1-P) \div d^2\ (N-1) +\ X^2P\ (1-P)$

   Where

   s = required sample size

   X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841)

   N = the population size

   P = the population proportion (assumed to be 0.50 since this would provide the maximum sample size)

   d = the degree of accuracy expressed as a proportion (0.05)

9. $mean = \frac{1}{n} \sum_{i=0}^{n} a_i$

10. $standard\ deviation, s = \sqrt{\frac{1}{N-1}\sum_{i=1}^{N}(x_i - \bar{x})^2}$